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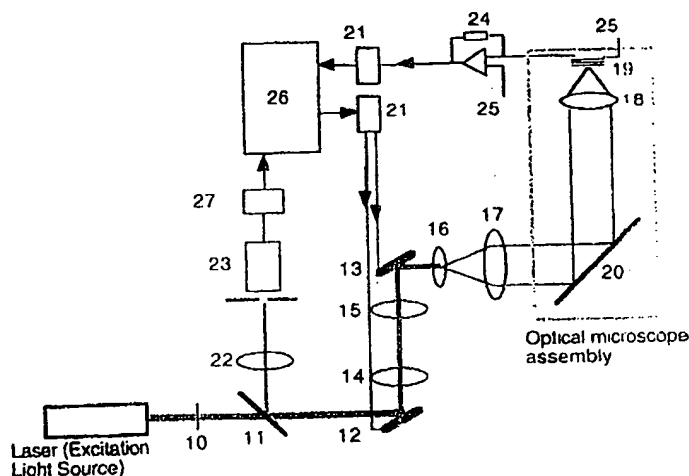
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(54) Title: METHOD FOR GENERATING HIGH-CONTRAST IMAGES OF SEMICONDUCTOR SITES VIA ONE-PHOTON OPTICAL BEAMINDUCED CURRENT IMAGING AND CONFOCAL REFLECTANCE MICROSCOPY



(57) Abstract: A method is disclosed that permits the generation of exclusive high-contrast images of semiconductor sites in an integrated circuit sample (19). It utilizes the one-photon optical beam-induced current (1P-OBIC) image and confocal reflectance image of the sample that are generated simultaneously from one and the same excitation (probe) light beam that is focused on the sample (19). A 1P-OBIC image is a two-dimensional map of the currents induced by the beam as it is scanned across the circuit surface. 1P-OBIC is produced by an illuminated semiconductor material if the excitation photon energy exceeds the bandgap. The 1P-OBIC image has no vertical resolution because 1P-OBIC is linear with the excitation beam intensity. The exclusive high-contrast image of semiconductor sites is generated by the product of the 1P-OBIC image and the confocal image. High-contrast image of the metal sites are also obtained by the product of the complementary OBIC image and the same confocal image.